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ABSTRACT

This review is based on research that identified the factors that appear to contribute to effective multidisciplinary teamworking. It focuses on solutions to problems that could plague multiprofessional activities in Scotland's education sector. It draws on both published research and unpublished commissioned reports, focusing on the work that has been done in health and social care. The main source for the review was a 2-year Department of Health funded study of multidisciplinary education in health care. The report is divided into six main sections. An introduction describes the report, the sources that were used, and the report's structure. Section one defines multidisciplinary teamworking and highlights the ambiguity that surrounds the concept. The second section identifies the change agents, such as changes in the workplace, the concept of competence-based assessment of professionals, and the focus on the end-user of services, that are currently encouraging the development of different ways of working. Section three presents the factors that appear to facilitate multidisciplinary teamwork, and section four provides evidence of inhibitors that can interfere with such teamwork. The last section discusses the implications of these changes on Scottish education. (Contains 54 references.) (RJM)

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Multidisciplinary Teamworking

Beyond the Barriers?

A Review of the Issues

Valerie Wilson
Anne Pirrie

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Valerie Wilson
Anne Pirrie

SCRE
The Scottish Council for Research in Education

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Executive Summary

Introduction

In February 2000 researchers from the Scottish Council for Research in Education (SCRE) undertook a review of the literature on 'multidisciplinary teamworking'. The review was commissioned by the Scottish Executive and forms part of the service level agreement between SEED and SCRE. Its main aim are to:

- identify published sources of information on multidisciplinary teamworking; and
- draw out the implications for policy and practice in Scottish education.

The review poses five questions, which policy makers and practitioners may wish to be answered. These are:

- What is multidisciplinary teamwork?
- What are the drivers for change?
- What appears to support multidisciplinary teamwork?
- What inhibits its development? and finally
- What are the implications for educational practice in Scotland.

A summary of the findings follows.

Findings

1: What is multidisciplinary teamwork? Key issues

'Multi' as a prefix describes activities which:

- bring more than two groups together
- focus on complementary procedures and perspectives
- provide opportunities to learn about each other
- are motivated by a desire to focus on clients' needs
- develop professionals' understanding of their separate but inter-related roles as members of a multidisciplinary team.

2: What are the 'drivers' of change? Key issues

A number of economic, practical and professional factors are 'driving' the movement towards multidisciplinary teamworking. These include:

- changes in working practices which require members of different professions and occupations to work together

- a focus on the end-user and the development of 'joined-up' policy
- increased demand from both potential and actual service users
- a desire to ensure that public services are delivered efficiently, thus minimising duplication and waste.

3: What supports multidisciplinary teamwork? Key issues

The main factors supporting multidisciplinary teamwork are:

- committed individuals who play a key role in team development
- staff with a common sense of purpose or vision and who work together to achieve it
- clearly negotiated team roles
- explicit support for such developments at the organisational level.

4: What inhibits multidisciplinary teamwork? Key issues

There are several inhibitors to successful multidisciplinary teamworking. These include:

- lack of appropriate accommodation and resources
- the role of professional bodies and profession-specific training
- attitudes of team members, especially ones which reinforce traditional professional hierarchies and stereotypes.

5: What are the implications for educational practice in Scotland? Key issues

From our findings, we suggest that multidisciplinary teamworking has implications for:

- current policy initiatives, in particular the implementation of New Community Schools, the extension of pre-school education and care through partnerships, early intervention, the use of classroom assistants and provision for children with special educational needs
- staff abilities to lead and manage multidisciplinary teams
- staff training, both initial and in-service, in preparation for working and leading such teams
- the physical layout of the school/centre/playroom in order to accommodate multidisciplinary teamworking
- the need to monitor and evaluate the benefits of multidisciplinary teamworking.

Introduction

Background

Interest in multidisciplinary teamworking has increased during the past decade (see for example, Poulton and West, 1993; Leathard, 1994; Barr, 1994; Mathias and Thompson, 1997; Barr *et al*, 1999). One of the main 'drivers', as we shall see in Section 2 below, is a shift in emphasis from providers of services to a greater focus on 'client-centredness'. We shall also argue (in Section 5), that this articulates well with educational concepts of 'child-centredness', the Scottish Executive's concern for greater social inclusion and its desire to promote 'joined-up' policies for the benefit of the end-users. Implicit in a number of recent educational initiatives (for example, the introduction of classroom assistants, Early Intervention, expansion of pre-school education in partnership with local authorities, and voluntary and private sector providers, the Child Care Strategy and New Community Schools) is the concept of multidisciplinary working.

The review

Although the concept of multidisciplinary teamworking, however ambiguously it may have been defined, is well-established in the literature of health and social care, little is written of the problems which might beset multiprofessional working in the education sector in Scotland. This review will act as a bridge between those ideas generated in different sectors. It was commissioned by the Scottish Executive in 1999 as part of the annual service level agreement with the Scottish Council for Research in Education and undertaken during February 2000.

Scope

The main aims of the review are to search the literature and identify the factors which appear to contribute to effective multidisciplinary teamworking. It is based primarily on published research which is readily available, but also draws from the 'grey literature' of unpublished commissioned reports. We also point out the implications for staff organisation and training in various sectors in Scotland. It should, however, be noted that it is selective and, of necessity, limited by the number of days allocated to this project in the contract. We provide a concise review which we hope will inform various Policy Divisions within the Scottish Executive and Her Majesty's Inspectorate of Schools.

Sources

The main source for this review is a two-year Department of Health funded study of multidisciplinary education in health care. This was undertaken between 1996-8 by a team of researchers from the Scottish Council for Research in Education in collaboration with the University of Dundee Centre for Medical Education and the University of East Anglia School of Nursing. The main conclusions from the project have been published elsewhere (see for example, Pirrie, Hamilton and Wilson, 1999; Pirrie *et al*, 1998). In order to update our original research, the following bibliographic databases have been searched: the British Educational Index, which is the major indexing service for 350 educational journals published in Britain; Educational Resource Information Centre (ERIC), the most comprehensive international indexing service which encompasses approximately 800 journals and also includes unpublished research. In addition, Education-line, a pilot project funded by the British Library and located in Leeds University, was also searched mainly for unpublished conference papers. The search focused on key words, such as 'multidisciplinary', 'inter-disciplinary' and 'teamworking' within the period 1998-9. We were, thus, able to capture work which had been undertaken since the completion of our original research in 1998.

Structure of the report

This review is presented in six main sections. In this, the introduction, we set out the review, its scope, the sources which have been searched and the structure of the report.

Section 1 defines multidisciplinary teamworking and highlights the ambiguity which surrounds the concept.

Section 2 identifies the 'drivers' which are currently encouraging the development of different ways of working.

Section 3 presents the factors which appear to facilitate multidisciplinary teamwork.

Section 4 provides evidence of inhibitors.

Section 5 discusses the implications for Scottish education. Finally, a full list of references is provided and how these were selected is appended.

The review follows.

Section 1: What is multidisciplinary teamworking?

> *... the workplace is changing ... the word 'interprofessional' ... no longer has much meaning ... all these words [multidisciplinary, inter-disciplinary, cross-professional] have come to mean something and nothing to everybody, and they're thrown about ...*
>
> (Postgraduate course organiser, Pirrie *et al*, 1998)

1.1 A clear concept?

1.1.1 What does the term 'multidisciplinary teamworking' mean? At first glance, it may seem obvious to the reader that the focus of this review is members of different professions working together. And yet it becomes only too apparent from the literature that it is far from a clear concept. The terms 'multidisciplinary' and 'interdisciplinary' are often used interchangeably. Leathard (1994) identifies the various prefixes ('multi' and 'inter') and adjectives ('disciplinary' and 'professional') which researchers and practitioners use. She refers to this as a 'terminological quagmire' (p.6) and it is this which must be clarified before multidisciplinary teamworking can be fully understood or implemented succe.sfully.

1.1.2 According to Pirrie *et al* (1998) the distinction between 'inter' and 'multi' is based upon three dimensions. These are:

- numerical
- territorial; and
- epistemological.

It would be all too easy to dismiss these distinctions as academic and fail to see the relevance to professionals who are attempting to work together to deliver a 'client-focused' service in different settings. Certainly, Pirrie, Wilson and Stead (1997) report that their attempts to evaluate multidisciplinary education were hindered by the lack of clarity they encountered.

1.2 'The numbers game: two or more?'

1.2.1 'How many professions must be present before a team is truly multiprofessional?': this is a question which is central to understanding multidisciplinary teamworking. Many argue that the difference between 'inter' and 'multi' is largely numerical. 'Inter' working appears to involve two professions only (Carpenter, 1995a), but becomes 'multi' if more than two groups are involved. By way of illustration: the working relationship between a nursery teacher and nursery nurse would be inter-disciplinary; whereas a

primary school teacher, classroom assistant, nursery nurse, learning support teacher and parent volunteer could form a multidisciplinary team.

1.2.2 Others support this distinction. For example, Rawson (1994) points out that:

> 'multi' implies many and some form of composition but again does not immediately suggest give and take [within the group] (p.40).

Unfortunately as Clark (1993) explains there is often little interaction or collaboration in multidisciplinary working:

> Programs termed 'multidisciplinary' may be defined as bringing various professions together to understand a particular problem or experience, such as the process of ageing. In this sense, they afford different perspectives on issues at hand, just as one sees different facets of a crystal by turning it (p.220).

1.2 Beyond the numbers game: a question of professional territory?

1.2.1 For some researchers the difference between 'multi' and 'inter' is more than just a numbers game. Issues of territory and professional boundaries impact on multidisciplinary working. As one of the focus group participants in our earlier research (Pirrie *et al*, 1998) put this:

> '... interdisciplinary ... it's like you are crossing into another space ...'.

This spatial imagery reoccurs in Becher's (1994) very persuasive picture of professionals inhabiting discrete territories, with the weaker members disputing the margins. He suggests that:

> some [disciplines] are so strongly defended as to be virtually impenetrable; others are weakly guarded and open to incoming and outgoing traffic (p.37).

1.2.2 The dangers of associating professions with territories are all too obvious. Members of different professions 'are likely to have a basic consensus about fundamental values, which they may express and reinforce ... and about which they seldom debate (Bailey, 1977, p.213). In our own research (Pirrie *et al*, 1998), one member of a multidisciplinary team illustrated this by pointing out that she: 'had been a member of a multidisciplinary team, but we didn't operate as a multidisciplinary team'. She ascribed this to the high status traditionally enjoyed by the medical profession, which tended to be based upon a clinical hierarchy with some members of the team being perceived to have more, rather than different, professional knowledge and status than the others. The

disadvantages of this claim to uniqueness are identified by Mackay (1992) who suggests that '[being locked] into a self-contained world of doctoring or nursing' is inimical to being a good doctor or a good nurse.

1.2.3 Continuing the metaphor, Bailey (1977) reminds us of the possible consequences of group rivalry as for example, the Big-endians fought with the Little-enders, the chickens starved (p.198). There are messages here for all professions. In some areas members of different professional groups appear to transcend their individual professional boundaries to achieve good outcomes for the client. For example, pre-school education and play has traditionally been delivered by staff holding a variety of qualifications, all working together in the playroom. Whether this model of multidisciplinary teamworking can be emulated by staff in other stages of education, e.g. the New Community Schools, is as yet untried.

1.2.4 It is clear from the literature that 'putting people together in groups representing many disciplines does not necessarily guarantee the development of a shared understanding' (Clark, 1993). Early research at Moray House College of Education by McMichael and Gilloran (1984) showed that shared teaching with no opportunity for joint working in teams created 'hostile stereotyping'. Our evidence from case study work of multidisciplinary learning echoes these findings (Pirrie *et al*, 1998). In our study, trainee nurses who share lectures with medical students or students in training for professions allied to medicine who followed a common first year course with nurses did not appear to develop an enthusiastic approach to multidisciplinary working with other members of the health care team. Often they sat in segregated groups and expressed concerns about the lack of opportunities to consolidate their own sense of professional identity.

1.3 An Integrated Team?

1.3.1 Is there then an extra ingredient which turns a group of professionals from different disciplines into an effective working team? One of our respondents suggested that: 'it's [interdisciplinary] like a sort of metadiscipline within which there are disciplinary threads that can be allocated to conventional boxes'. We have argued (Pirrie *et al*, 1998) that this distinction is epistemological, dependent as it is not just on a blurring of professional boundaries but also on the creation of a new way of working. As Nolan (1995) put it:

> Interdisciplinary care, although not denying the importance of specific skills, seeks to blur the professional boundaries and requires trust, tolerance, and a willingness to share responsibility (p.306).

Our focus group members believed that in teamworking there was a strong association with the notion of interdependence which went beyond merely working in the same physical space and entailed a shared purpose.

1.3.2 Several authors (for example, Rawson, 1994; Goble, 1994; Carpenter, 1995a, 1995b) consider that some degree of reciprocal influence and a readiness to embrace a new identify and role are essential. As Rawson explains:

> the prefix 'inter' denotes relationships both between and among the elements and further implies some notion of reciprocal operations (p. 40).

The result, as one of our respondents expressed, was to 'get something that's more than the sum of its parts, you get something different, a metaperspective'.

1.3.3 There are, as one would expect, strong forces to be overcome before fully integrated teams emerge. Wilmot (1995) points out that a truly 'integrated' perspective demands a greater 'degree of maturity and flexibility with regard to their knowledge base' (p.259) than is usually found. Engaging in 'shared reflection on their practice' (p.259) may help resolve some inherent tensions but the essentials, in Clark's (1993) view are:

> ... the kind of cognitive and behavioural change that occurs: participants understand the core principles and concepts of each contributing discipline and they are familiar with the basic language and mindsets of the various disciplines represented (p.220).

This is a high expectation given the paucity of opportunities for members of different professions to learn together during their initial training when professional identities and stereotypical views of other groups may be formed. Even the move away from training teachers in monotechnics is unlikely to bring them into contact with nursery nurses, care assistants, psychologists and social workers - many of whom will contribute to their work in schools and education centres. This would require bridging not only the further and higher education divide but also the very powerful disciplinary barriers.

1.4 Summary

In sum, Pirrie *et al* (1998) argue that the evidence from the literature indicates that 'multi' describes activities which:

- bring more than two groups together
- focus on complementary procedures and perspectives
- provide opportunities to learn about each other
- are motivated by a desire to focus on clients' needs
- develop participants' understanding of their separate but inter-related roles as members of a team.

In contrast, 'inter' is more appropriately used when the activity enables members of the team to:

- develop a new interprofessional perspective which is more than the sum of the individual parts
- integrate procedures and perspectives on behalf of clients
- learn from and about each other
- reflect critically on their own knowledge base
- engage in shared reflection on their joint practice
- surrender some aspects of their own professional role
- share knowledge
- develop a common understanding.

Having clarified the terminology, we identify the 'drivers' of multidisciplinary teamworking in the next section.

Section 2: What are the 'drivers' of change?

2.1 Introduction

Changes in professional practice do not occur in isolation: they are invariably located in a social and political context. In this section, we locate multidisciplinary teamworking within the context of overarching changes in both policy and practice in the health and education sectors, and identify a number of specific 'drivers' which are encouraging its development. These include:

- changes in the workplace
- the concept of competence-based assessment of professionals
- the focus on the end-user of services; and
- underpinning all, a desire to ensure that public services are delivered economically and provide the best value for money.

We consider each of these below.

2.2 A changing workplace

2.2.1 Much has been written over the past few years about the changes in patterns of work and how these impact on different professional groups.(*cf*, for example, Leathard, 1994; Poulton and West, 1993; Jones, 1986). Pringle (1993) argues that these changes in structure have been accompanied by concurrent developments in multidisciplinary teams in which staff both work and learn together. In the health service in particular, it is clear that the development of a primary-care led NHS has led to a significant reappraisal of working practices and a renewed emphasis on collaboration and teamwork between health and social care professionals in the best interests of the patient. (See for example, Wilson *et al*, 1998.)

2.2.2 The focus has gradually shifted from a concentration on the 'specific combination of skills, knowledge and values' (Hugman, 1995, p.41) that characterise any one health profession to the ways in which health and social care professionals can deploy a range of skills - many of which are complementary or overlapping - in the interests of efficient and effective patient care.

2.2.3 The workplace in education is also changing. The Childcare Strategy (SOEID, 1998) encourages local authorities to co-operate with voluntary and private

sectors to form partnerships for the delivery of pre-school education. (These have been evaluated by Classic Concepts (Broussine, 1999). Opportunities for different professions to work together are provided by local childcare partnership groups which meet to determine local needs and how these may be met. Unfortunately, the problems of professional status which we identify in Section 4 below seem to have arisen in some partnerships (see Munton, *et al*, 1999). The development of multiprofessional working within community schools is still at an early stage but should be encouraged by the initiative. Hall and Powney (1999) provide some insights into parental expectations of two community schools in Glasgow and a national evaluation is being commissioned.

2.2.4 Changes in the way work is organised were identified in our earlier research (Wilson *et al*, 1996). Some of our respondents identified a symbiotic relationship between various team members in general medical practice which may be one key to effective multidisciplinary teamworking. As one doctor put it: 'I like to feel I work in a team, the support, you can't do everything yourself' (p.21). The impossibility of maintaining up-to-date knowledge in numerous areas was a spur to teamworking. This was recognised by doctors working in different environments. One consultant pointed out that: 'you can be so far up a limb [of specialisation] that you can't actually see what is going on ...' (p.21). Faced with these difficulties, it is easy to see the attractions of multidisciplinary teamworking.

2.3 Development of competence

2.3.1 Throughout the 1980s and onwards there has been a movement towards describing professional knowledge and expertise in competence terms. The impetus for a competence-based approach is exemplified in the creation of the National and the Scottish Council for Vocational Qualifications to oversee the implementation of a five-level competence framework (Eraut, 1994, p.184). Significantly, what began as an attempt to ensure standards in a variety of occupational areas and industries, many of which had offered few development opportunities to employees was extended to include qualifications at the 'professional level'. This move was by no means universally welcomed.

2.3.2 What is competence? The Collins English Dictionary defines competent as 'having sufficient skill, knowledge ... suitable or sufficient for the purpose', but as Eraut (1994) points out definitions of competence may imply 'sufficient to get the job done or the negative meaning of adequate but less than excellent'

(p.166). It is this apparent narrowness and neglect of excellence which has provoked opposition from a number of academics. For example, Barnett (1994) argues that the twin processes of modularization and credit accumulation and transfer have fragmented the learning experience of many in higher education.

2.3.3 How then are we to make sense of developing professional competence? Dreyfus and Dreyfus (1986) provide one way of progressing beyond the merely adequate or sufficient performance with their concept of five discrete levels of development. These range from novice, advanced beginner, through competent and proficient performer to the expert, who no longer relies on guidelines but is able to demonstrate tacit understanding, vision and self-reflections - a tall order for any professional.

2.3.4 At one level the competence-based approach provides an impetus to multidisciplinary teamworking. Functional mapping of occupational areas and laddering of qualifications make it much easier to identify the skills and knowledge overlaps of various team members. But on the other, it leaves unresolved issues of the maintenance of expertise and is open to criticisms of 'levelling down' by encouraging the development of 'generic' team workers.

2.4 Focus on the end-user

2.4.1 There is some evidence that the balance of power has shifted over the past decade from professionals to the groups which they serve. In the health service, a White Paper, *Working for Patients* (Department of Health, 1989) has had profound impact upon the way primary and hospital care are organised. It heralded the split between purchasers of services on behalf of patients and providers of services, which although modified by the current Government, now finds its expression in primary care groups. This focus on the end-user is seen in other social policy areas.

2.4.2 The recently formed Scottish Executive has provided a steer towards the end-user. Targets for social inclusion and sustainability are proposed, (Scottish Executive, [1997], p.11) both of which, as cross-cutting issues, can only be delivered through inter-professional working. Multidisciplinarity appears to be implicit in recent policy initiatives.

2.4.3 The literature provides few examples of multidisciplinary teamworking in education which focus on the needs of specific end-users. Most examples are American and many concern children with special needs. (See for example, the

Iowa State Department of Education Technical Assistance Guide for Learning Disability, 1997). Huebner and Gould (1991) studied a sample of American psychologists to determine their levels of satisfaction with the decision-making process for children with special needs undertaken within multidisciplinary teams. Only moderate problems emerged. Others (Dewar and Isaac, 1998) describe efforts to engage community members and one (Haycock, 1998) includes librarians. But despite focusing on the end-user, most identify cultural and personal differences within the team as barriers to collaboration.

2.5 Economies and best value

2.5.1 Economy, efficiency and effectiveness are now well-established principles underpinning the delivery of public services. Commissioners and providers are challenged to ensure that services not only meet objectives but do so according to the principles of best value. Following these precepts multidisciplinary teamworking has been perceived as one way of ensuring that services are efficiently delivered primarily through the avoidance of duplication. Course organisers, who responded to Pirrie *et al* (1998) pointed out time and hence money could be saved:

> I do think that there has been an awful lot of waste of time and effort in health care so far because I'm sure you and I ... can think of all sorts of times when treatment's been covered by more than one person and it's been duplicated (p.5).

2.5.2 This emphasis on economy is particularly important at a time when the demand for all social services is growing. Developments in multidisciplinary teamworking in health care are occurring when 'there seems no limit to our ability to consume health care' (Mackay, Soothill and Webb, 1995, p.6). Increasing demands on the social service, linked in part to a greater 'client-centredness', a rise in patients' expectations and the particular demands of an ageing population, have further fuelled attempts to deploy resources effectively. Many initiatives in health have focused on the division of labour between different occupational and professional groups. One example from primary care is the suggestion that:

> some current GP workload could be managed differently through initiatives such as nurse practitioners ... and patient triage at the first point of contact.
> (The Future Healthcare Workforce. Report of the Project Steering Group, 1996, p.8)

2.5.3 Similar pressures are now being exerted on the education system in Scotland. On the one hand, demand for education in the pre- and post- compulsory sectors

continues to rise. As Watt (1994) points out the case for pre-school educational provision need no longer be argued as it was in the early 1990s, and has been recognised in the Scottish Executive's targets for the provision of a part-time place for every three-year old whose parents want one by 2002. Further evidence of increased demand for pre-school education is provided by economic consultants DTZ Pieda (McDowall *et al*, 1999). In addition participation rates in further and higher education continue to rise (Bamford and Schuler, 1999). While on the other hand, this trend places increasing pressure on existing resources as exemplified by the Cubie Committee deliberations on student finance (Scottish Executive, [1999]).

2.6 Summary

A number of economic, practical and professional factors are 'driving' the movement towards multidisciplinary teamworking. We have seen above that these include:

- changes in working practices which require members of different professions and occupations to work together
- a focus on the end-user and the development of concepts of a 'seamless service' and 'joined-up' policy
- increased demand from both potential and actual service users. In education this is affecting both the pre- and post-compulsory sectors
- a desire to ensure that public services are delivered efficiently thus minimising duplication and waste.

These provide the context for the development of multidisciplinary teamworking. There are, however, specific factors which facilitate its development. We consider these in the following section.

Section 3: What encourages multidisciplinary teamworking?

3.1 Introduction

In this section, we examine the factors which facilitate the development of multidisciplinary teamworking. We focus upon those operating at the institutional, team and individual levels.

3.2 Personal commitment

3.2.1 It is difficult to overestimate the effect of committed individuals, or 'champions' to the success of multidisciplinary teamworking. Respondents in both our earlier research projects on multidisciplinary education (Pirrie *et al*, 1998) and organisational learning (Wilson *et al*, 1996) made clear that some of the commitment to this way of working had been forged from experiences in practice. Team leaders and supporters were usually able to draw upon a wealth of experience and professional networks built up over the years and 'push' for change in their own institutions. Team members who did not have 'a particular disciplinary axe to grind', who perceived themselves to be 'a bit of a hybrid' and welcomed 'eclecticism' were seen as crucial elements for a multidisciplinary approach.

3.3.2 Personal commitment was demonstrated in the way multidisciplinary teams were led in our earlier studies. The role of 'hands on clinicians' was often identified as an important element in creating a learning culture (Wilson *et al*, 1996). Members of multidisciplinary teams were encouraged to question as they saw good clinicians practice. This role of 'player manager' was, as one consultant described, central to his vision for his team:

> I try and spend fifty per cent of my time actually on the 'shop floor' just seeing patients as they come through in turn. ... Getting equipment and drugs and meeting users. I've got staff, educating the staff, teaching them, advising them ... and I tend to keep my door open and they do come and ask me for advice ... I think that is important, presumably gaining respect from each of your staff if they see that you can do a good job' (p.44).

3.2.3 The presence of these 'player managers' produced tangible benefits (Wilson *et al*, 1996). Staff believed that in such teams 'everybody has a fair idea of what is best practice'. Other respondents described how in their team they 'strive to do the best ... and anything new that comes out we do try to either adopt it or just find out more about it' (p.45). In addition staff were not expected to move

unsupported beyond their developing levels of competence. We found in teams which lacked the personal commitment of a 'player manager', staff reported they were 'coping', 'managing' or even 'struggling' with situations that present themselves in every-day practice. In any profession which relies on on-the-job learning, it is clearly difficult to find the correct balance between challenging the novice practitioners to move beyond rule conformity (*cf.* Dreyfus and Dreyfus, 1986) and providing a supportive climate in which to learn more. This is the area in which a committed team leader can make a significant impression by being aware of the skills of the different team members and providing appropriate supervision, coaching and feedback on performance.

3.3 A common goal

3.3.1 It is now generally accepted in management literature that successful organisations develop a shared vision of the organisation's future with their staff (see for example, Peters and Waterman, 1982; Pearn, Roderick and Mulrooney, 1995). Evidence from our study of learning organisations highlighted the role which vision plays. However, in practice developing a shared vision and working together to make it a reality can be laborious and time-consuming.

3.3.2 Respondents to our earlier research (Pirrie *et al*, 1998) pointed out how it:

> takes a lot of effort ... it does take a certain type of commitment to keep abreast of other disciplines ... (p.32).

Another believed that to be really successful:

> You have to have a group of people with a vision ... you have to have people who are as aggressive as me to bulldoze ... to take people through (p.32).

This focus on vision may explain why the few references to multidisciplinary teamworking in education emanate from the special educational needs area. There is now more pressure to articulate a vision for a child with special educational needs, especially following the introduction of Individualised Learning Plans, and it is an area in which members of different professions have traditionally co-operated with each other.

3.3.3 From our research (Wilson *et al*, 1996; Wilson and Pirrie, 1999) we concluded that in departments/teams where a strong vision was evident, respondents described the increased confidence and inspiration to learn which resulted from

the example set by committed clinicians. This in turn had a 'domino effect' on the rest of the staff. Working closely with other staff gave senior clinicians opportunities to share their vision and the role of 'hands-on clinicians' was often identified as an important element in creating a common learning culture.

3.4 Clarity of roles and communication

3.4.1 Multidisciplinary teamworking does not require all members of staff to perform the same roles. Evidence suggests that role clarification is essential. Respondents to our earlier research (Wilson *et al*, 1996) describe how by allocating and rotating team roles, forming what one practice manager referred to as 'a sort of roles and responsibilities matrix', staff motivation was maintained. Another described how he firmly believed that: 'after a period of time it is important to move on and pass the role on to someone who is coming to it fresh' (p.21).

3.4.2 But team roles are rarely static and in our research reference was made to ways of introducing innovative teamwork. Extending the boundaries of her profession, a hospital-based midwife alluded to the development of 'group practice midwifery'. This entailed changing established roles and team membership as a group of seven midwives assumed responsibility for 'three hundred women from conception to the tenth post-natal day', territory previously inhabited by their medical colleagues.

3.4.3 Interestingly, team roles often developed in adversity. Night time in a hospital environment was perceived by many of our respondents as offering both challenges and opportunities for teamworking. Rather pragmatically, one senior midwife recalled increasing her clinical knowledge during periods of night duty because there were few other distractions. And a senior house officer in a different speciality described how professional relationships within the team developed during the night shift when:

> 'we can be incredibly busy here sometimes and quite a low number of doctors and the amount of work ... there's just you and the nurses and they do everything just very quickly' (Wilson *et al*, p.22).

3.4.4 Models of professional development suggest that members of professions develop by reflecting on their practice (Schon, 1983). This can be encouraged by team members sharing insights with others. Significantly from our 1996 study, 'feedback on performance' are words which were rarely used. A variety of euphemisms was preferred: a 'chat', 'various comments', 'talk together', and

'doing well' all appeared. Despite these semantic variations, there is unanimity on the value of feedback. Staff at all levels appreciated informal feedback. A number of respondents echoed the sentiments of one midwife that '[feedback] is very important to me. I like them [team members] to tell me I'm doing it well and I try if I'm not doing things well' (p.23).

3.5 Institutional support

3.5.1 Work teams usually exist within an institutional framework which may or may not support multidisciplinary teamworking. Our respondents (Pirrie *et al.* 1998) believed that the degree to which they enjoyed support from their organisation varied considerably. Some institutions were described as 'vaguely supportive' of multidisciplinarity; in others staff were generally unsure of the degree to which their institution supported their endeavours. This is especially potent if there is no evidence that the policy-making centre of the organisation supports multidisciplinary teamworking.

3.5.2 It is not surprising that respondents perceive traditional organisational structures as a barrier to multidisciplinarity. Many organisations operate departmental structures and attempts to introduce matrix management, based upon functional divisions, present challenges. Some have experimented with ad hoc cross-functional task groups, especially in the newer oil and information technology industries, but the public sector appears reluctant to explore these options.

3.6 Summary

The main points to emerge from our consideration of 'facilitators' of multidisciplinarity are:

- committed individuals can play a key role
- staff need to develop a common sense of purpose or vision and work together to achieve it
- team roles should be clearly negotiated with team members
- explicit support from the host organisation appears to play a significant role.

We now turn to the inhibitors of multidisciplinary teamworking.

Section 4: What inhibits multidisciplinary teamworking?

4.1 Introduction

In this section, we examine the factors which inhibit the development of multidisciplinary teamworking. In addition to the absence of those facilitators identified in Section 3 above, we focus specifically on those inhibitors which must be overcome if multidisciplinary teamwork is to be effective. These include both intra- and extra- team limitations.

4.2 Logistics

4.2.1 There is very little published research on the effects of the physical environment on the way teaching is organised. McPake *et al* (1999) in a study of the primary classroom point out that despite seating children around tables on the assumption that they will collaborate, we have little evidence that collaborative working actually takes place. Work currently being undertaken within the Building Department at Heriot-Watt University is exploring the acoustics of the classroom to determine how different buildings affect what children hear. Two studies commissioned by the Scottish Executive which are on-going - Fraser and Pirrie's study of Early Intervention and Wilson *et al's* recently commenced study of classroom assistants - should when completed provide evidence of teamworking within the constraints of traditionally built schools and classrooms.

4.2.2 Respondents to our research (Pirrie *et al*, 1998) highlight the logistical requirements associated with multidisciplinarity. Many comments relate to specific problems arising from organising and delivering courses involving several professional groups and staff from more than one department. One suggested that the biggest problem was 'actually getting people together' (p.37). As another respondent, put it: 'you really need to be doing problem-solving together' if multidisciplinary working is to be effective. And this too presents its own problems in respect of accommodation, resources, library and IT facilities.

4.2.3 We believe that the influence of the structure of schools and classrooms on how staff operate is a neglected area of research. Interestingly, a relatively new school which is often held as an exemplar - St Margaret's High School, Livingston - has still not been evaluated and is now the reported model for PFI refurbishment of other secondary schools. Whether or not this particular design

- based upon a 'main street' concept - encourages multidisciplinary teamworking has yet to be established.

4.2.4 In contrast to a teaching area defined by the physical constraints of a classroom, pre-school establishments are often open-plan, include composite groups of children and staff from various professional groups. In theory they offer greater possibilities for teamworking; in practice, they may be just as hierarchical as a traditional classroom. Stephen *et al* (1999) found little to differentiate the practices of nursery teachers from nursery nurses in an observational study of good practice in pre-school establishments. This may, in part, be explained by the fact that managing and planning - typically undertaken by the nursery teacher - could not be observed because they were undertaken by the teacher outwith the confines of the playroom. These divisions, the seeds of which are sown in profession-specific initial training, may be perpetuated in practice and reinforced by professional associations and different terms and conditions of employment.

4.3 The role of professional bodies

4.3.1 The primary functions of a professional body are to safeguard professional standards and to ensure that education and training are appropriate to that purpose. Some bodies also have a wider remit to take account of issues regarding public safety. However, from the benchmarking exercise of professional associations recently completed by Deloitte and Touche (1999), we see that the General Teaching Council for Scotland does not include this wider remit in its role.

4.3.2 Professional associations usually guarantee professional standards through accreditation of professional competence. In practice, there is little liaison between different professional bodies, some of whose members may work in proximity to each other with the same client groups; this has led to the growth of unsynchronised validation cycles and profession-accreditation of competence. Miller and West are currently developing a functional map of the competences required of classroom assistants. However, this may bear little relationship to the competences of nursery nurses and primary school teachers, both of whom may be members of the same multidisciplinary team.

4.4 Attitudes of team members

4.4.1 We suggested in Section 3 above that multidisciplinary teamworking required mutual understanding between members of different professions. Good communication is only one aspect of multidisciplinary interaction. We explored

in our earlier research (Pirrie *et al*, 1998) whether multidisciplinary working actually helps to dismantle or reinforce professional boundaries and promote or inhibit mutual understanding between professions. A recurring theme from our research was that staff who work together develop an awareness of each other; begin 'breaking down barriers' and develop an 'appreciation of strengths and weaknesses' (p.23). In addition, there is the recognition that individual professions may not hold a monopoly of the knowledge base to deal effectively with the user-group.

4.4.2 Unfortunately, there is also evidence of limiting factors determined by the unwillingness of some to co-operate, acknowledge different roles and effect change. Professional hierarchies and feelings of domination by other professions may provoke strong reactions. Some refer to this as 'tribalism' (see for example, Becher, 1994). Clark's (1993) definition of a 'profession' turns round the notion of a 'unique body of knowledge, types of skills, and modes of conduct' (p.219). Attitudes of exclusivity which new initiates into a profession acquire in initial training, and fear of a 'dilution' of professional standards may be confirmed and strengthened in practice. How to confront these attitudes remains the challenge for multidisciplinary teamworking.

4.4.3 Developing appropriate attitudes for multidisciplinary working may be best achieved over time after trainees had developed their confidence and competence in a single knowledge base. There was, certainly, a widespread consensus amongst both staff and students in our research (Pirrie *et al*, 1998) that students preferred to develop 'a sense of relatedness' to their particular professional group before engaging in multidisciplinary education. This was variously described as: 'a professional identity'; 'find their feet first'; feel secure in 'their home base' rather than engage in shared learning from the beginning of their training.

4.5 Summary

There are several potent inhibitors to successful multidisciplinary teamworking. These include:

- lack of appropriate accommodation and resources
- the role of professional bodies and profession-specific training
- attitudes of team members, especially ones which reinforce traditional professional hierarchies.

Having identified the factors which either inhibit or support multidisciplinary teamworking, we now consider the implications for Scottish education.

Section 5: What are the implications for Scottish education?

5.1 Introduction

In this section we discuss the implications for policy and practice in Scottish education arising from this review.

5.2 A question of evidence

First, we conclude that there is very little evidence regarding the efficacy of multidisciplinary teamworking in educational settings. Few studies exist in this area. We have, therefore, utilised evidence arising from our own and other studies in related social policy areas of health and social care. We readily admit that situation-specific factors may account for some of the findings but believe that, in the absence of better matched studies, they provide some useful pointers to issues which need to be addressed in the education sector.

5.3 A policy 'steer'

Second, it is now apparent that the Scottish Executive is committed to fostering social inclusion and has announced ambitions targets (Scottish Executive, [1999]). We suggest that this policy 'steer' to address complex cross-cutting social issues will increase the demand for multidisciplinary teamworking as members of different professional and occupational groups, including those from the education sector, work towards the social inclusion targets. There will be a concurrent need to develop and evaluate appropriate models for multidisciplinary teamworking if members of different professions are to work together effectively. Elements of this already exist in pre-school education and care, where local authorities are being encouraged to plan, organise and deliver provision in a co-ordinated way (Wilson and Ogden-Smith, 1999) and also for children with special needs who require Individual Learning Plans. We foresee an increased demand for multidisciplinary teamworking.

5.4 Leading and managing multidisciplinary teams

Third, we conclude that leading and managing multidisciplinary teams requires sensitivity and increased skills. Professions are associated with status and exclusivity. Some roles have traditionally been reserved to certain occupations, which may no longer be justified in the light of functional mapping of occupational activities, multi-skilling and client-focused provision. Evidence from successful teams in healthcare provides us with the model of the 'player manager' who is able to develop and lead teams drawn from different

professional groups. Appropriate models for education now need to be developed and evaluated.

5.5 Training

Fourth, we found that roles in multidisciplinary teams were rarely static. Teams worked best when roles were clarified, extension and rotation were included and members were provided with feedback on their performance. We suggest that the implementation of multidisciplinary teamworking requires post-initial training for staff who are likely to be working together if they are to function effectively. Ideally this should be included after staff have developed a firm concept of their own base discipline and we recommend that more opportunities for multidisciplinary in-service education should be identified. In addition leading multidisciplinary teams could be included in management courses for teachers, for example in the Scottish Qualification for Headship and other courses for senior education managers.

5.6 Physical environment

Fifth, research indicated that resources influence the way teams work. A number of issues here should be explored further. These include: the organisation of the classroom, playroom and lecture room and the evaluation of new school buildings to determine which designs best support multidisciplinary teamworking. Further work on the relationship between physical space, its utilisation and collaborative learning is required.

5.7 Evaluation of the benefits

Finally, we still do not know whether multidisciplinary teams in education will be more effective at raising standards than traditional ways of organising staff. Some light will be shed on this issue from on-going research e.g. the evaluation of Early Intervention and Classroom Assistants. If, however, policy is to be underpinned by evidence, then a systematic study of multidisciplinary teamworking in different education settings is required.

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Appendix A: Selection of evidence

This section briefly summarises the issues which we faced when selecting references for inclusion in this review and how we resolved them.

A1 Comprehensiveness

Three key words 'multidisciplinary', 'interdisciplinary' and 'teamworking' were used to search the two main databases - the British Education Index and ERIC. These generated approximately 3000 references (2861 on 'teamwork'). However, only 31 from ERIC referred specifically to 'multidisciplinary teamworking', of which only 4 were school-based examples. The British Education Index revealed 225 references for 'teamwork' but only one for 'multidisciplinary teamwork'. Therefore, although this review is intended to inform educational policy and practice, we were unable to draw on much research which matched our specification.

A2 Quality and reliability

Quality and reliability of research studies for inclusion in a review may be judged in a number of ways. Harlen and Malcolm (1999) adopt Salvin's 'best evidence' synthesis practice 'borrowed from the profession of law and applied in reviewing research. It requires a reviewer to identify criteria for what is good quality research, yielding best evidence in a particular field...place more emphasis on the findings of studies which match the criteria' (p.1). Alternatively, Mooney and Munton (1998, p.71) in a previous review for the Scottish Executive conform to the guidelines issued by the NHS Centre for Review and Dissemination (CRD) at the University of York (1996). This provides a hierarchy of research design which purports to reflect the validity of the evidence generated by each study. The main categories are:

I	well-designed randomized controlled trails (rarely possible in educational settings)
II-1 a/b	well-designed controlled trial with either pseudo-randomization or no randomization
II-2 a/b/c	well-designed prospective cohort studies with either concurrent or historical controls, and retrospective studies with concurrent controls. (examples of this include AAP and SSLS)

II-3 well-designed retrospective case-control study (for example, evaluation of Early Intervention)

III large differences from comparisons between time/place with and without the intervention (for example, the Clackmannan study of synthetic phonetics, Watson and Johnston, 1998)

IV opinions of respected authorities based on clinical experience, descriptive studies and reports of expert committees.

Most of the studies to which we refer in this review emanate from the latter three categories: the evidence comes from case studies (e.g. Pirrie *et al*, 1998); experts reflecting on their practices (e.g. Jones,1986) or tutors describing developments (Leathard, 1994).The paucity of evidence from educational sources may be a reflection on both the difficulties inherent in determining the efficacy of multidisciplinary teamworking and also a lack of interest in the topic.

A3 Relevance

'Are the studies cited in this review relevant to educational practices?' We would argue that they are. In the absence of reliable evidence from the education sector, we have selected evidence from associated social policy areas, such as health care and social work, and indicated where we think links may be made across the various sectors. Given the current emphasis on 'cross-cutting' issues and social inclusion, we think it appropriate for education to learn from other areas which may have more experience of organising staff in multidisciplinary teams.

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